WATER SUPPLY ASSESSMENT

FOR THE

NORTH BAYSHORE MASTER PLAN PROJECT

Prepared by

CITY OF MOUNTAIN VIEW

City of Mountain View

and

Schaaf & Wheeler
CONSULTING CIVIL ENGINEERS

December 2022

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Table i. Acronyms Used in this Report

Acronym	Description
AFY, ac-ft/yr	Acre-feet/year
ccf, hcf	Centum cubic feet, Hundred cubic feet
gpd	Gallons per day
gpcd	Gallons per capita day, or gallons per person per day
gsf	Gross square feet
MGD	Million gallons per day
sq-ft	Square feet
BAWSCA	Bay Area Water Supply and Conservation Agency
BMP	Best management practice
Cal water	California Water Service Company
CCR	California Code of Regulations
C&I	Commercial and Institutional
CEQA	California Environmental Quality Act
CWC	California Water Code
DDW	SWRCB Division of Drinking Water (formerly CDPH)
DMM	Demand management measure
DWR	California Department of Water Resources
ECH	El Camino Hospital
EIR	Environmental Impact Report
LAFCO	Local Agency Formation Commission
MVPWD	Mountain View Public Works Department
NBMP	North Bayshore Master Plan
RWQCP	Regional Water Quality Control Plant
RWS	City and County of San Francisco's Regional Water System
SB	California Senate Bill
SFPUC	San Francisco Public Utilities Commission
SVCW	Silicon Valley Clean Water (formerly SBSA)
SWRCB	California State Water Resources Control Board
UDF	Unit Demand Factor
UWMP	Urban Water Management Plan
VW	Valley Water
WCIP	BAWSCA Water Conservation Implementation Plan
WSA	Water Supply Assessment
WSIP	SFPUC Water System Improvement Program
WVS	Written Verification of Supply

Table ii. Units of Measure Used in this Report

Unit	Equals
1 acre-foot	= 43,560 cubic feet = 325,851 gallons
1 cubic foot	= 7.48 gallons
1 ccf	= 100 cubic feet = 748 gallons
1 MGD	= 1,000,000 gallons/day = 1,120 acre-feet/year

Summary of Water Supply Assessment

Project: North Bayshore Master Plan Project; Mountain View, California

Pursuant to Section 10910 of the California Water Code (CWC), and based on the analysis detailed in this report and the representations by the Project's proponents, the City of Mountain View Public Works Department estimates that its currently projected water supplies will be sufficient to meet the projected annual water demands of existing and previously approved uses and the implementation of the North Bayshore Master Plan (NBMP) Project during normal, single dry-, and multiple dry-years. The Project will increase water demand within the City by approximately 197 acre-feet per year (AFY), which was not accounted for in the 2020 Urban Water Management Plan (UWMP) and therefore represents an increase in the projected demand. Depending on the final outcome and implementation of the State Water Resources Control Board's *Bay Delta Water Quality Control Plan*, Mountain View's primary water supply from the San Francisco Public Utilities Commission may be reduced significantly during dry years (possibly up to 59.5 percent). Although the status of the Bay Delta Plan is still undetermined, Mountain View plans to utilize local groundwater wells as needed during dry years in order to limit cutbacks to 20 percent, and implement the City's Water Shortage Contingency Plan to reduce water demand during droughts.

Section 1 - Introduction

1.1 Project Overview

The City of Mountain View in Santa Clara County, California, (City) is reviewing the potential impacts of the North Bayshore Master Plan Project (NBMP Project). The 151-acre project redevelops the area north of US-101 within the North Bayshore Precise Plan boundary. The proposed new development will have up to 122,000 square feet of retail, up to 122,000 square feet of restaurants, up to 3,145,897 square feet of office, up to 55,000 square feet of community spacing, up to 525 hotel rooms, and 7,000 residential dwelling units. Industrial and office park buildings will be redeveloped for a total of 1,842,647 square feet of building redevelopment. The net increase of development exceeds the total quantities studied in the North Bayshore Precise Plan and related Water Supply Assessment for various land use types. This Water Supply Assessment analyzes the net increase of development above the quantities studied in the previous Water Supply Assessment and is being prepared in accordance with SB 610 for the City's California Environmental Quality Act (CEQA) work in connection with the project. Potable water supply for the NBMP Project is provided by the City of Mountain View. Further description of the NBMP Project is given in Section 2.0.

1.2 Purpose of Water Supply Assessment

The California Water Code (§10910 et. seq.), based on Senate Bill 610 of 2001 (SB 610), requires a project proponent to assess the reliability of a project's water supply as part of the California Environmental Quality Act (CEQA) process. If the City or District providing potable water supply does not have sufficient existing water supply to meet the project demands of the project, the development of additional water supplies must be addressed in the WSA and in the project EIR.

Under the California Government Code (§66473.7), based on Senate Bill 221 of 2001, proposed subdivisions adding 500 dwelling units are also required to receive written verification of the available water supply from the project's water supplier. This project does not include the creation of a subdivision or a subdivision tract map, so a written verification of supply is not required.

This report is meant to serve as the Water Supply Assessment (WSA) for the Project to meet the California Water and Government Code requirements. This WSA documents the City's existing and future water supplies for the Project area and compares them to the City's total projected water demands for the next twenty (20) years.

SB 610 requires the following steps be taken to identify the need and scope of a project's WSA:

1. Determine whether the project is subject to CEQA.
2. Determine whether the project meets the definition of a "project" per SB 610.
3. Determine the public water agency that will serve the project.
4. Determine whether any current Urban Water Management Plan considers the projected water demand for the project area.
5. Determine whether groundwater is used by the public water agency to serve the project area.

1.3 Project Subject to CEQA

CEQA applies to projects for which a public agency is directly responsible, funds, and/or requires the issuance of a permit. The City of Mountain View determined that the Project is subject to the

requirements of CEQA. The NBMP Project is being developed following the 2030 General Plan and in accordance with previously adopted Environmental Impact Reports for the 2030 General Plan[1] and the North Bayshore Precise Plan[2] and the Subsequent Environmental Impact Report for the North Bayshore Precise Plan[3].

1.4 Project Requiring a Water Supply Assessment

CWC §10912(a) defines a Project for WSA purposes as including any of the following:

- a proposed residential development of more than 500 dwelling units;
- a proposed shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- a proposed commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- a proposed hotel or motel, or both, having more than 500 rooms;
- a proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- a mixed-use project that includes one or more of the projects identified in this list; or
- a project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

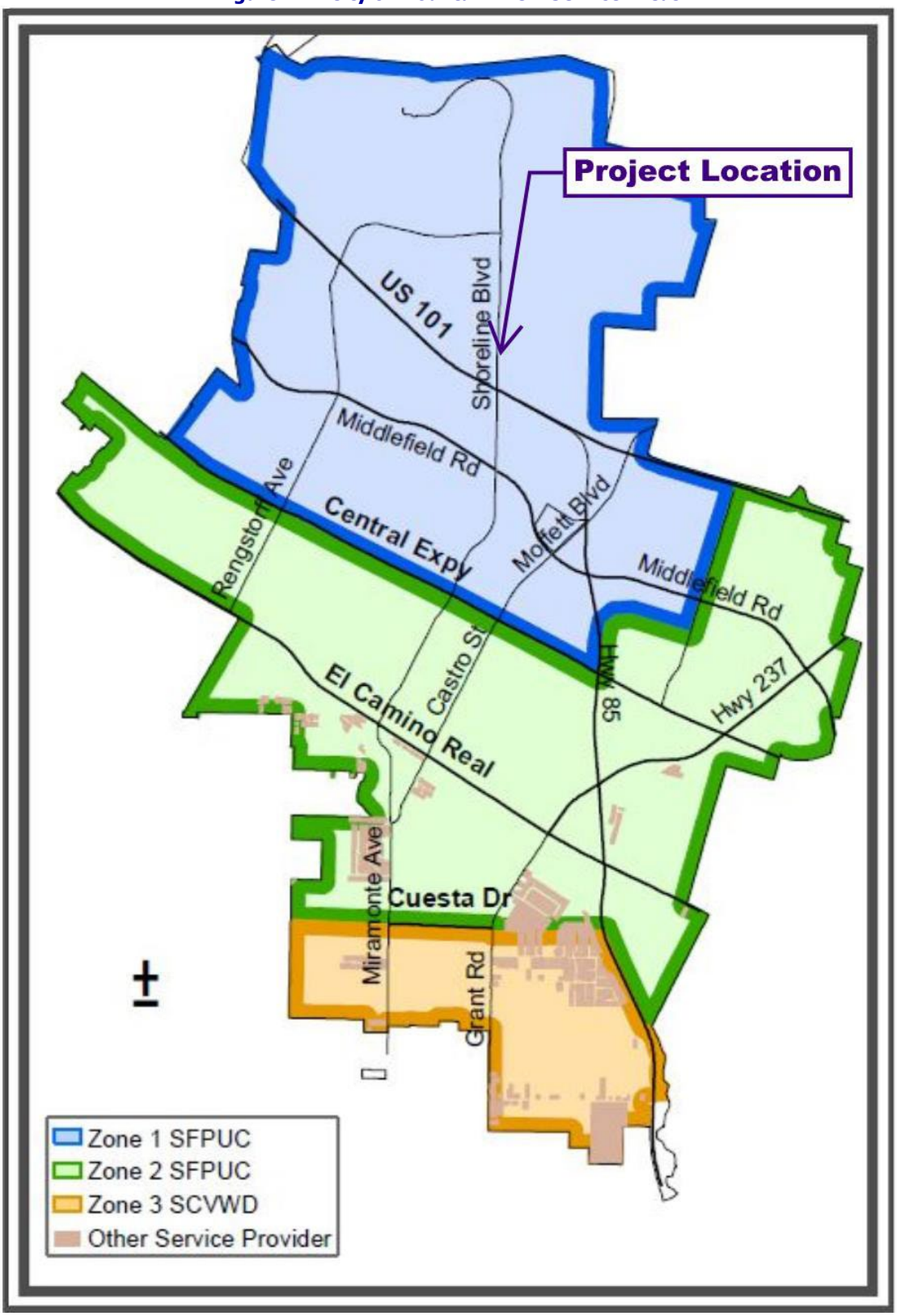
The NBMP Project will result in a net increase in water usage from the pre-project scenario due to the addition of 325 hotel rooms, 199,206 additional square feet of retail/restaurant space, and 66,957 additional square feet of institutional/recreational space (1,760 equivalent dwelling units). Therefore, the City has required a Water Supply Assessment for the NBMP Project.

1.5 Public Water Agency Serving the Project

The City of Mountain View municipal water system serves the majority of the City of Mountain View including the NBMP Project (see Figure 1-1). The City is the water retailer for the area in which it serves and purchases water from both the Valley Water (VW) and the San Francisco Public Utilities Commission (SFPUC), which are water wholesalers. The City has three service areas described by three pressure zones. The upper Zone 3 lies south of Cuesta Drive and is supplied by treated water obtained by the City from VW. The middle Zone 2 between Cuesta Drive and Central Expressway and lower Zone 1 north of Central Expressway to the San Francisco Bay are both supplied by treated water obtained by the City from the SFPUC, and can be supplemented by City operated groundwater wells. A small number of customers in Mountain View are served by the California Water Service Company.

[1] LSA, City of Mountain View 2030 General Plan and Greenhouse Gas Reduction Program Final Environmental Impact Report, 2012
[2] Raimi & Associates, City of Mountain View North Bayshore Precise Plan Update, 2017
[3] David J Powers & Associates, Subsequent Environmental Impact Report North Bayshore Precise Plan Update, 2017

Figure 1-1: City of Mountain View Service Areas



Source: City of Mountain View

1.6 Relationship of WSA to the Mountain View Urban Water Management Plan

The California Urban Water Management Planning Act (§10610 et. seq. of the CWC) requires urban water suppliers providing over 3,000 acre-feet per year (AFY) of water or having a minimum of 3,000 service connections to prepare plans (Urban Water Management Plans or UWMPs) on a five-year, ongoing basis. An UWMP must demonstrate the continued ability of the provider to serve customers with water supplies that meet current and future expected demands under normal, single dry-, and multiple dry-year scenarios. These plans must also include the assessment of urban water conservation measures and wastewater recycling. Pursuant to Section 10632 of the CWC, the plans must also include a water shortage contingency plan outlining how the water provider will manage water shortages, including shortages of up to fifty percent (50%) of their normal supplies, and catastrophic interruptions of water supply. The City of Mountain View is required to prepare Urban Water Management Plans. The City's most recent Urban Water Management Plan (2020 UWMP) was adopted in June 2021. The 2020 UWMP projects demands for 25 years through the year 2045.

As provided for in the State law, this WSA incorporates by reference and relies upon many of the planning assumptions and projections of the 2020 UWMP in assessing the water demands of the proposed Project relative to the overall increase in water demands expected within the entire City service area. The 2020 UWMP projects a moderate increase in water demand within the City due to the projected infill development under the City 2030 General Plan. The 2020 UWMP projects overall total water demand (potable and recycled) within the City to increase from 9,856 AFY in year 2020 to 14,163 AFY in year 2045, a net increase of 4,307 AFY (approximately 44%). This increase accounts for plumbing code updates (5% use reduction in 2025 to 10% in 2045). Conservation measures[4] are not included and could result in an additional 2-6% (2025-2045) reduction from the base-case scenario. Increased recycled water use is not accounted for in the UWMP but is available to offset additional potable water use. The City is evaluating recycled water system expansion options. Because the NBMP Project increases land use beyond that projected in the North Bayshore Precise Plan and corresponding Subsequent Environmental Impact Report (SEIR)[5], the projections in the 2020 UWMP described above do not include all of the NBMP Project demand.

[4] UWMP, Section 4.3.3 Table 4-3, 2020

[5] City of Mountain View North Bayshore Precise Plan Subsequent Environmental Impact Report, 2017

Section 2 - Project Description and Water Demands

2.1 Project Description

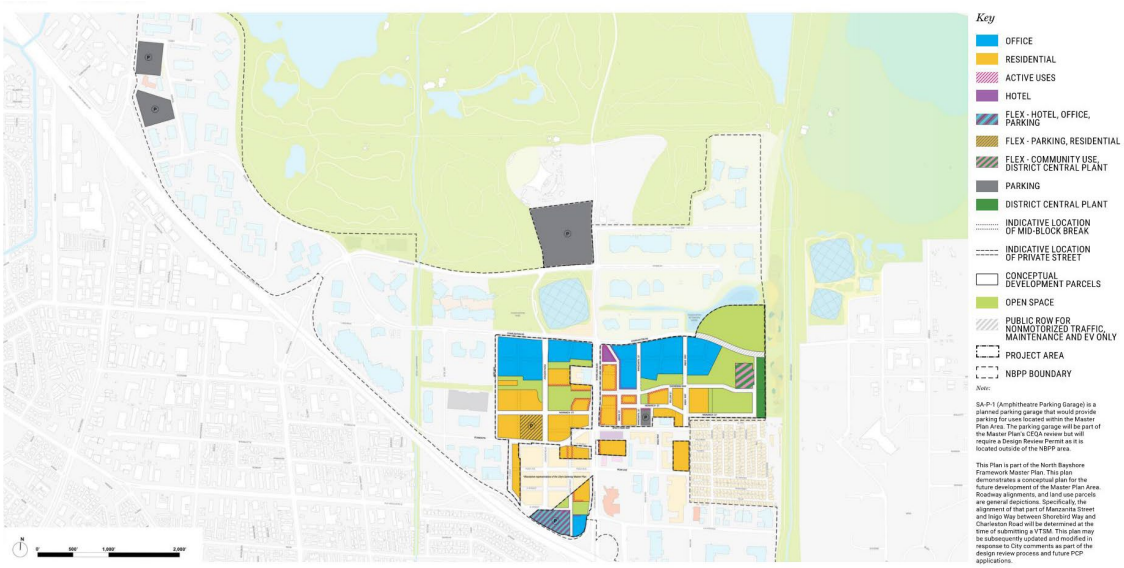
The proposed Project would redevelop the area north of US 101, south of Charleston Road, east of Huff Avenue, and west of Stevens Creek Trail in conformance with the City of Mountain View North Bayshore Precise Plan Update. The Project area is currently developed primarily with an industrial office park.

The site would be redeveloped with several new office buildings totaling up to 3,145,897 square feet, several new residential buildings with up to 7,000 dwelling units, up to 244,000 square feet of retail/restaurant, up to 55,000 square feet of community space, up to 525 hotel rooms, several parking garages, and approximately 30 acres of park/open space. The project proposes to remove several existing office/industrial buildings, for a total of 1,842,647 square feet of demolition. Upon completion, the project would result in a total net increase of approximately 1,303,250 square feet of office space. The project would also require installation of new utilities, landscaping, driveways, and other site improvements.

The NBMP Project intends to apply for Leadership in Energy and Environmental Design (LEED) Platinum level based on the Green Building Council rating system for all office buildings and a minimum Green Point Rating of 120 points, or equivalent for all residential buildings. Approximately 25% of the project area will be open space, including a wide, central public promenade and smaller outdoor retail plazas. Landscaping on the project will feature native and low-water use plants, trees, shrubs, and other ground cover and the irrigation system will be mostly drip irrigation. Water efficiency will also be achieved through the use of low water-consuming fixtures and fittings and will be WaterSense labeled. Recycled water use is required for landscape irrigation in the North Bayshore Area. The City's Recycled Water Feasibility Study is also planning to expand their Recycled Water system to additional portions of the City to allow new projects to install dual-plumbing for non-potable indoor uses, and use recycled water for outdoor irrigation.

The project site is designated High-Intensity Office and Mixed-Use Corridor in the City's 2030 General Plan and the project does not propose any modifications to the 2030 General Plan land use designation.

Figure 2-1: Proposed Site Plan



Source: Lendlease Silicon Valley Development LCC, North Bayshore Framework Master Plan, 2021

2.2 NBMP Project Land Use and Water Demands

The NBMP Project is a mixed-use area and water demands can be estimated on a per-square foot basis using unit duty factors based on the land use type. Municipal water meter records have been reviewed for the period between 2005 and 2021 for the existing buildings in the Project area. Meter records provided water use every other month from 2005 to 2021 in centum cubic feet (ccf). Data from 2020 and 2021 is affected due to mandatory work from home requirements as a result of the COVID-19 pandemic. Recycled Water data is only available from 2010 to present. Data from 2010-2019 is used to populate Table 2-1 to remain consistent. All available data was used to create Figure 2-2 for reference. Water meter records from the City are broken down by water use in the following categories and further broken out into potable and non-potable water use:

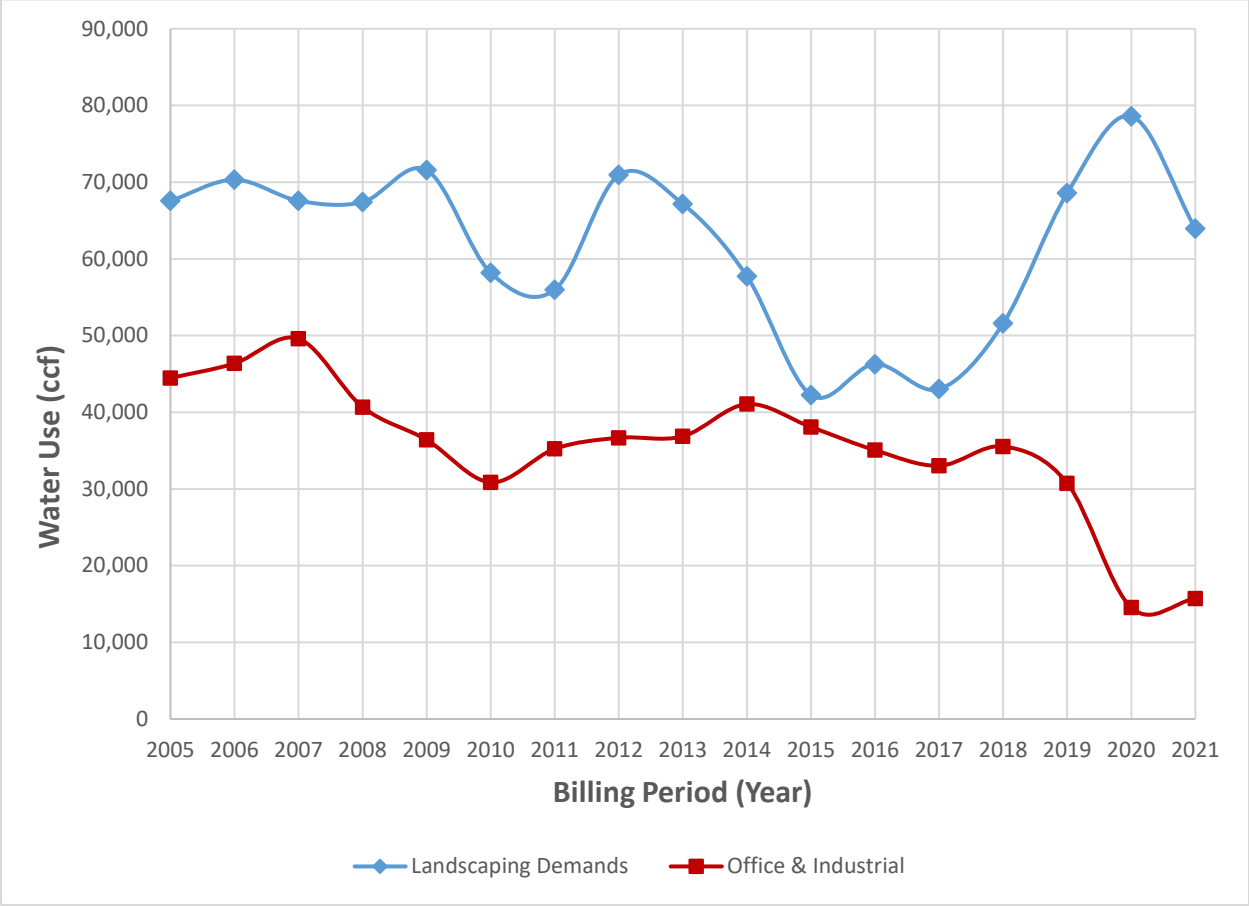
- Irrigation
- Commercial
- Industrial
- Landscaping

Average existing water use is shown in Table 2-1. Average existing water use is based on the sum of all the meter records divided by the months of record to obtain an average gallons per day value. Irrigation and commercial water use over the period of record are shown in Figure 2-2.

Table 2-1: Existing Water Use at Project Area (2010-2019)

Water Use Type	Average Monthly Water Use (ccf/month)	Average Daily Water Use (gpd)	Average Yearly Use (AFY)
Potable Water	6,184	152,081	170
Recycled Water	1,459	35,874	40
Total	**7,643**	**187,955**	**210**

Figure 2-2. Irrigation and Commercial Water Use at NBMP Project Site (2005-2021)



In this report, unit duty factors for the NBMP Project and other approved projects are based on the North Bayshore Precise Plan Phase II (NBPP) duty factors and the 2010 Water Master Plan. The NBPP duty factors were approved by the City and include indoor and outdoor water use. The duty factors are based on information from several sources, including the General Plan Update Utility Impact Study (GPUUIS) and recent water use data.

Table 2-2: Unit Duty Factors

Land Use	Unit	Duty Factor (gpd/unit) or (gpd/1000 sq ft)	Source
Single-Family	Dwelling Units	225	GPUUIS
Multi-Family	Dwelling Units	100	Recent Development Projects Meter Data
Office	Square Feet	90	Recent NBPP Meter Data
Research & Development	Square Feet	130	Recent NBPP Meter Data
Retail	Square Feet	130	GPUUIS
Industrial	Square Feet	60	Recent NBPP Meter Data
Restaurant	Square Feet	1,200	GPUUIS
Service	Square Feet	130	GPUUIS
Hotel	# Rooms	100	Capacity Fee & Recent Residential Meter Data
Institutional/Recreational	Square Feet	165	Recent NBPP Meter Data
Mixed Use	Square Feet	130	2010 Water Master Plan

Source: North Bayshore Precise Plan Phase II Utility Impact Study, 2016; 2010 Water Master Plan

2.3 Project Total Water Demands

The total water demand projected for the NBMP Project at project build-out based on unit duty factors presented in Table 2-2 is 1,489 AFY and includes the North Bayshore Precise Plan II demands and the estimated increase beyond the North Bayshore Precise Plan II, shown below. This is an increase of approximately 197 AFY over demands assumed in the North Bayshore Precise Plan EIR and SEIR. The City does not have a unit demand factor for parking garages; therefore Table 2-3 represents the demands of the mixed-use and residential buildings and surrounding landscaping, but omits demands for parking garages. By their nature and use, parking garages are expected to have negligible water use. This study assumes the estimated water demands for the 31-acres of open space will be supplied by the City's recycled water system and was already included in the NBPPII WSA and the 2020 UWMP. These estimates are conservative as they do not account for onsite water conservation efforts such as landscaping with low water use plants, the use of recycled water for irrigation, dual plumbing and low flow sanitary fixtures and technologies associated with LEED Platinum construction.

Table 2-3: Estimation of Existing and Future Water Demand Using UDFs (AFY)

	Land Use Type	Unit Duty Factor (gpd/unit) or (gpd/1000 sf)	Area (sf)	Dwelling Units	Daily Demand (gpd)	Total Demand (AFY)
Total North Bayshore Master Plan Demands	Multi-Family Residential	100		7,000	700,000	**1,493**
	Office / R&D	130	3,145,897		408,967	
	Restaurant[1]	1,200	122,000		146,400	
	Retail[1]	130	122,000		15,860	
	Hotel	100		525	52,500	
	Institutional/ Recreational	165	55,000		9,075	
	Total				1,332,802	
Estimated Increase Above NBPPII WSA Studied Demands[2]	Hotel	100		325	32,500	**197**
	Restaurant[1]	1,200	99,603		119,524	
	Retail[1]	130	99,603		12,948	
	Institutional/ Recreational	165	66,957		11,048	
	Total				176,020	

Notes:

1. *In the North Bayshore Precise Plan, restaurant land use was not distinguished from retail use. However, the two have different water unit duty factors. Consequently, this WSA considers half of the proposed Retail/Restaurant development is restaurant.*
2. *Estimated Increase outlines the level of development proposed as a portion of the NBMP above the level of development previously approved as a portion of the North Bayshore Precise Plan II.*

2.4 City Water Demands

2.4.1 Historical and Current Water Demands

Table 2-4 shows the City's water use over the period 2016-2020 in AFY. The City's average use over that period was 9,303 AFY, or 8.30 mgd. Water demand in 2020 was 14 percent higher than in 2016.

Table 2-4: Historical and Current Water Demands (AFY)

Customer Type	Year				
	2016	2017	2018	2019	2020
Potable Water					
Single Family Residential	2,159	2,299	2,414	2,401	2,689
Multi-Family Residential	2,798	2,903	2,913	2,864	3,063
Commercial, Industrial and Institutional	1,754	1,750	1,804	1,773	1,365
Landscape Irrigation	1,494	1,763	2,070	2,050	2,367
Construction	3	3	2	3	7
Recycled Water					
Commercial	0	4	4	4	3
Landscape Irrigation	315	391	343	377	363
Construction	2	1	1	1	1
Total	***8,523***	***9,113***	***9,551***	***9,473***	***9,856***

Source: 2020 UWMP, Table 4-1

2.4.2 Future Demands

Table 2-5 shows projected water demands for the City through 2045, taken from the 2020 UWMP. The projections shown take into account plumbing code updates but do not include savings due to active water conservation measures or expansion of the City's recycled water system. Landscape irrigation includes potable and recycled water demands. The City is projecting minor demand growth in the single-family residential sector and moderate growth in multi-family residential, commercial and institutional, industrial, and landscape irrigation sectors.

Table 2-5: 2020 UWMP Water Demand Projections (AFY)

Customer Sector	Year				
	2025	2030	2035	2040	2045
Single Family Residential	2,632	2,573	2,523	2,482	2,445
Multi-Family Residential	3,569	3,873	4,191	4,520	4,854
Commercial, Industrial, and Institutional	2,129	2,192	2,261	2,334	2,411
Landscape Irrigation	2,916	3,062	3,207	3,353	3,499
Construction	12	13	14	15	16
Nonrevenue Water	801	834	867	903	939
Total Demand	***12,058***	***12,548***	***13,064***	***13,607***	***14,163***

Source: 2020 UWMP, Table 4-4

2.4.3 Dry-Year Demands

Section 10631 of the Water Code requires that water demands be estimated for an average water year, a single dry water year and multiple dry water years. As discussed in the City's 2020 Urban Water Management Plan, the Mountain View service area has a Mediterranean climate, with cool wet winters

and warm dry summers. Rain typically occurs in November through April. Evapotranspiration (ETo) greatly exceeds annual rainfall, resulting in high water demands for landscape irrigation. During dry years, the irrigation demand for the NBMP Project can be expected to increase by 5%[6], while the indoor demands remain constant. However, during dry years, landscape irrigation is considered a non-essential use and restriction is prioritized over indoor usage. The North Bayshore Project will be subject to staged water use restrictions associated with the City's Water Shortage Contingency Plan.

[6] California Irrigation Management Information System, Station 171 - Union City

Section 3 - Water Supply

3.1 Current Supply

The City of Mountain View water supply is primarily obtained through imports from the San Francisco Public Utility Commission (SFPUC) and Valley Water (VW) totaling 84 percent and 10 percent of the supply respectively. This is supplemented with local groundwater wells comprising about 2 percent of the supply. In North Bayshore, recycled water is available from the Palo Alto Regional Water Quality Control Plant (RWQCP) for non-potable uses, which equaled 4 percent of the total supply in 2020. A small portion of the City is served by California Water Service Company (Cal Water), Los Altos District.

3.1.1 SFPUC

The majority of the City's water supply comes from the City and County of San Francisco's Regional Water System (RWS), which is operated by San Francisco Public Utilities Commission (SFPUC). Mountain View is one of 26 wholesale customers that are supplied by the RWS, which also supplies the City and County of San Francisco. The "Water Supply Agreement between the City and County of San Francisco and Wholesale Customers in Alameda County, San Mateo County and Santa Clara County" (July 2009) governs this relationship. The Regional Water System produces approximately 265 MGD (296,800 AFY), allocated as 81 MGD for retail customers and 184 MGD for wholesale customers. In May 2017, the City agreed to transfer 1.0 MGD (1,120 AFY) of its water supply rights from the SFPUC to East Palo Alto; the SFPUC now provides up to 12.46 MGD (13,957 AFY) to the City.

3.1.2 Valley Water

VW acts as the primary water resources agency for Santa Clara County and imports water from various State and Federal water projects. In addition, the VW captures and stores local surface water and recharges local groundwater basins. VW has a contract for 152,500 AFY of water from the Federal Central Valley Project (CVP) and 100,000 AFY from the State Water Project (SWP). Locally, VW operates ten reservoirs with a combined storage capacity of 166,000 acre-feet, though several are operating at restricted capacity due to seismic stability concerns. VW manages the recharge of the groundwater basins but does not operate any groundwater wells. Mountain View receives water from the VW through a 70 year water supply contract that was entered into in 1984. The City provides the VW with a 3-year demand projection, anticipated monthly deliveries for the year, and projection information for the next seven years. These projections allow VW to manage its water to meet the demands for the next five years. The estimated maximum available supply to Mountain View is 1,200 AFY.

3.1.3 Groundwater in Mountain View

Mountain View owns and operates four active potable groundwater wells within the Santa Clara Plain Subarea of the Santa Clara Subbasin (DWR Subbasin 3.301). VW manages the recharge of the groundwater basin per the 2021 VW Groundwater Management Plan which describes the programs in place to maintain a reliable groundwater supply. In June of 2021, the VW called for a continued reduction in water use of 15 percent compared to 2019.

VW reported that the long-term average groundwater pumping in the Santa Clara Subbasin is 87,000 AFY[7]. Over the past twenty years, the City extracted on average less than 1% of this total at 315 AFY. In 2020, the City pumped almost half of the average extraction (190 AFY).

Historical groundwater production in Mountain View from 2015 to 2020 is shown in Table 3-1. Future groundwater production is anticipated to meet about 5% of the City's total water needs[8]. Based on current production capacity, the estimated maximum available supply is 5,314 AFY. Groundwater well production may be increased to meet future demands.

Table 3-1: Historical Groundwater Production

Year	Production (AFY)
2015	145
2016	117
2017	138
2018	165
2019	249
2020	190

Source: 2020 UWMP, Table 5-1

3.1.4 Recycled Water

The Palo Alto RWQCP provides recycled water to the City of Mountain View for the North Bayshore Area. The recycled water system currently serves parcels within the NBMP Project area. The City has a maximum supply allocation from the RWQCP of approximately 3,360 AFY of recycled water. Future allocations may increase as the plant is upgraded to further expand and improve recycled water supply.

3.2 Normal and Dry Year Supply

The NBMP Project is located in an area of the City served primarily with SFPUC treated water. Future plans currently include expanding the recycled water system to serve more demands in this area.

The reliability of the San Francisco RWS is discussed in detail in the 2020 Urban Water Management Plan. In order to enhance the ability of the SFPUC water supply system to meet identified service goals for water quality, seismic reliability, delivery reliability, and water supply, the SFPUC has undertaken the Water System Improvement Program (WSIP). The WSIP will deliver capital improvements aimed at a total delivery reliability goal of 265 MGD of supply with no greater than 20 percent rationing in any one year of a drought – consistent with the SFPUC's adopted Level of Service Goal. This project is currently 99 percent complete and is anticipated to be complete in 2023.

In December 2018, the State Water Board adopted amendments to its Bay Delta Plan to establish water quality objectives to maintain the health of the Bay Delta ecosystem. A main goal of the Bay Delta Plan is to increase salmon populations in the Bay Delta and three San Joaquin River tributaries by requiring 30 percent to 50 percent unimpaired flow from February through June. The SFPUC has analyzed past system yields to identify periods with single and multiple dry-years. The SFPUC has translated these dry-year

[7] VW Groundwater Management Plan, 2021
[8] UWMP, 2020

projections into reductions to the wholesale water supply available to the BAWSCA member agencies, including Mountain View. SFPUC projects that if the Bay Delta Plan is implemented as adopted, the dry year water supplies available to the BAWSCA agencies will be reduced between 36 and 54 percent (based on projected wholesale demand of 162 MGD) or between 55 and 60 percent (based on a maximum wholesale demand of 184 MGD). To address potential future shortfalls, SFPUC is increasing and accelerating its efforts to acquire additional water supplies and explore other projects that would improve water resilience. Capital projects under consideration include surface water storage expansion, recycled water expansion, water transfers, desalination, and potable reuse. These projects are in the early feasibility or conceptual planning stages, and SFPUC expects to complete the Alternative Supply Program evaluation by July 2023.

VW has developed a 2020 VW UWMP[7] to discuss the potential threats to water supply including climate change, local fisheries operations, invasive species damage, earthquake, environmental regulations, and reduced groundwater production. Based on Valley Water's existing and planned sources of supply, Valley Water expects to be able to meet Countywide demands through 2045 under normal and drought conditions.

In the event that Mountain View's wholesale water supplies are reduced during dry years, the City plans to implement the temporary demand reduction measures as described in the City's Shortage Contingency Plan[8] and increase groundwater production to limit the cumulative supply reduction to 20 percent.

3.3 Conservation

The City has implemented a variety of water conservation measures, as described below, and works with VW and BAWSCA on conservation programs. The City has two permanent full-time positions dedicated to water conservation as part of the City's Water Conservation Program.

First, the City has updated several regulations to reduce water use. In 2015, the water waste prevention ordinance was updated and expanded to include permanent water use restrictions and more restrictive prohibitions according to increasing stages of water shortage. In February of 2016, the City updated its Water Conservation in Landscaping Regulations, which promote the use of region-appropriate plants and establish standards for irrigation efficiency. The City also approved the Mountain View Green Building Code in March 2011, which requires water-efficient plumbing fixtures or a 20% reduction from baseline water use for new or renovated buildings.

Second, the City worked to make water metering more conservation-minded and to maintain low water loss in the system. Radio-equipped meters were installed in the City starting in 2007, allowing the City to save time and money by removing the need to manually read meters. The City is currently evaluating a new version of meter reading called Advanced Metering Infrastructure. Advanced Metering Infrastructures generates real time data and, with certain software, can allow customers to see how and when they use water. The City also audits water loss annually and the audits have shown less than a 10 percent system loss, which is consistent with the industry standard. To maintain the water system, the City has an infrastructure and capital improvement program and ongoing maintenance and repair activities. When billing customers, the City uses tiered rates and uniform rates, respectively, which are considered conservation-oriented by the California Water Efficiency Partner.

Third, the City, along with its partners, provides account-specific ways to conserve water. Single-family residential accounts receive customer recommendations through the online WaterInsight portal. For dedicated landscape irrigation accounts with 500 ccf in annual irrigation water use, the City provides monthly reports that track actual usage compared to a calculated budget based on landscape area and climate conditions. Landscape water audits are also encouraged to provide landscape managers with water-use analyses, scheduling information, in-depth irrigation evaluations, and recommendations for affordable irrigation upgrades.

Fourth, rebates and free equipment are available for a variety of water account holders through the City and its partners. Free waterwise surveys and plumbing equipment (such as showerheads) are available for residential customers. Restaurants may receive low-flow prerinse dishwashing spray valves from VW or the City if they have less efficient spray valves. Rebates are available from the City for multi-family accounts who install a submeter to meter individual units. Customers who install water-efficient irrigation equipment and/or replace turf with low-water use plantings may receive rebates from the VW. Businesses that implement process and equipment changes resulting in significant water savings are eligible for a rebate from the VW.

Finally, the City and its partners provide information and outreach programs in many different ways. Outreach and educational programs include complimentary assembles by EarthCapades, free in-class lessons by VW, and landscape education classes by the City. The Water Conservation Program maintains an online presence through a dedicated website and posts to Facebook, Twitter, and Nextdoor. Information about conservation, events, and incentive programs is provided on bills and bill inserts and at community and corporate events. Brochures are available in buildings throughout the City and there is a dedicated phone line for water conservation-related customer inquiries.

Conservation efforts are projected to reduce water use by 5% from 2020 through 2045, but are **not** included in the demand projections in the Mountain View 2020 UWMP.

3.4 Regulatory Permits Necessary for Supply Delivery

The City of Mountain View operates a public water system, permitted by the California Department of Public Health, System No. 4310007. The NBMP Project is currently connected to the water distribution system, so no additional project permits are required. The City purchases wholesale water supply from the San Francisco Regional Water System, which is a public water system permitted by the California Department of Public Health, System No. 3810001 and from VW, System No. 4310027. All systems are required to comply with California Code of Regulations Title 22 per the State Water Resources Control Board Division of Drinking Water.

Section 4 - Supply Sufficiency Analysis

4.1 Comparison of Project Demands to Projected Supply

With the addition of the North Bayshore Master Plan Project (NBMP Project), the City's water supply contract with the San Francisco Public Utilities Commission (SFPUC) and Valley Water (VW) meets the projected water demands throughout the planning period, as shown in Table 4-1 below.

The 2020 UWMP potable demand is based on land use from the 2030 General Plan, including the North Bayshore Precise Plan, East Whisman Precise Plan, El Camino Real Precise Plan, and San Antonio Precise Plan. Demand in the 2020 UWMP does not include the estimated incremental increase in demand from the NBMP Project above the North Bayshore Precise Plan EIR and SEIR. The NBMP Project above the North Bayshore Precise Plan EIR and SEIR results in between a 1.4% and 1.7% increase in demand over the UWMP projected demand.

Table 4-1: Mountain View Production vs. Demand, Normal Year (AFY)

Supply Source	Year				
	2025	2030	2035	2040	2045
SFPUC[1]	10,351	10,841	11,357	11,898	12,456
VW[2]	1,176	1,176	1,176	1,176	1,176
Groundwater[2]	280	280	280	280	280
Potable Supply Production	**11,807**	**12,297**	**12,813**	**13,356**	**13,912**
Potable Demand	11,610	12,100	12,616	13,159	13,715
North Bay Shore Master Plan	197	197	197	197	197
Total Potable Demand	**11,807**	**12,297**	**12,813**	**13,356**	**13,912**
Difference (% demand)	***0***	***0***	***0***	***0***	***0***
Recycled Supply	448	448	448	448	448
Recycled Demand	448	448	448	448	448
Difference (% demand)	***0***	***0***	***0***	***0***	***0***

Source: UWMP, 2020, Table 5-2 & Table 6-4

Notes:

1. *SFPUC production differs from that presented in the 2020 UWMP. The production shown here is based on expected supply needs up to the City's maximum water supply guarantee of 13,957 AFY.*
2. *Supply is based on expected operations and does not reflect the maximum supply available or maximum production capacity.*

4.2 Reliability of Water Supply

The deficit between potable supply and demand during a single dry-year is estimated to be 20% both with and without the NBMP Project. This deficit is significantly higher than previous WSAs and the 2015 UWMP due to the adoption of the Bay Delta Plan and the associated curtailments of water supply from the SFPUC, which are projected to reduce supplies to the BAWSCA agencies (including Mountain View) up to 59.5 percent if the Bay Delta Plan is implemented as adopted.

The shortage is anticipated to be met through temporary demand reduction measures according to the City's Water Shortage Contingency Plan and increased groundwater production. The maximum available

groundwater is estimated in the 2020 UWMP to be 5,314 AFY based on historical use and design capacities of wells and could be used to offset some of the deficient during dry years. Recycled water supply and demand is not anticipated to change during drought years and is considered a reliable water source during drought years. Table 4-2 shows the reduction in the Mountain View supply during a single dry-year.

Table 4-2: Mountain View Production vs. Demand, Single Dry-Year (AFY)

Supply Source	Year				
	2025	2030	2035	2040	2045
SFPUC[1]	6,489	6,779	7,090	7,428	6,679
VW[2]	1,176	1,176	1,176	1,176	1,176
Groundwater[2]	1,730	1,382	1,934	2,031	3,224
Potable Supply	**9,395**	**9,787**	**10,200**	**10,635**	**11,079**
Potable Demand	11,807	12,297	12,813	13,356	13,912
North Bay Shore Master Plan	197	197	197	197	197
Total Potable Demand	**12,004**	**12,494**	**13,010**	**13,553**	**14,109**
Difference (% demand)	***-20***	***-20***	***-20***	***-20***	***-20***
Recycled Supply	448	448	448	448	448
Recycled Demand	448	448	448	448	448
Difference (% demand)	***0***	***0***	***0***	***0***	***0***

Source: UWMP 2020, Table 6-4

Notes:

1. *SFPUC production is based on the single dry year maximum supply.*
2. *Supply is based on expected supply needs and does not necessarily reflect the maximum supply available.*

Table 4-3 shows the reduction in the Mountain View water supply during multiple dry-years. The maximum deficit between demand and supply occurs in. In all future multiple dry years, projected water demands exceed the available potable supply by 20% of the total City potable water demand.

The City has a staged Water Shortage Contingency Plan, described in detail in the 2020 UWMP, which includes a mix of voluntary and mandatory rationing actions. Levels 1 through 5 of the Contingency Plan can mitigate shortfalls of up to 50%. Level 6 can mitigate shortfall above 50%. Consequently, the 20% demand shortfall projected herein should be mitigated by conservation and water use restrictions described in the Contingency Plan. Water use during July 2017 in the City was 32% less than in 2013.

Table 4-3: Mountain View Production vs. Demand, Multiple Dry-Years (AFY)

Supply Source	2025					2030					2035					2040					2045				
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5	Year 1	Year 2	Year 3	Year 4	Year 5
SFPUC[1]	6,489	5,564	5,564	5,564	5,564	6,779	5,815	5,815	5,815	5,815	7,090	6,076	6,076	6,076	5,569	7,428	6,372	6,372	5,623	5,623	6,679	6,679	6,681	5,678	5,678
VW	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176	1,176
Groundwater[2]	1,781	2,706	2,706	2,706	2,706	1,883	2,847	2,847	2,847	2,847	1,984	2,998	2,998	2,998	3,505	2,081	3,137	3,137	3,886	3,886	3,275	3,275	3,273	4,276	4,276
Potable Supply	9,446	9,446	9,446	9,446	9,446	9,838	9,838	9,838	9,838	9,838	10,250	10,250	10,250	10,250	10,250	10,685	10,685	10,685	10,685	10,685	11,130	11,130	11,130	11,130	11,130
Potable Demand	11,610	11,610	11,610	11,610	11,610	12,100	12,100	12,100	12,100	12,100	12,616	12,616	12,616	12,616	12,616	13,159	13,159	13,159	13,159	13,159	13,715	13,715	13,715	13,715	13,715
North Bayshore MP Demand	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197	197
Total Potable Demand	11,807	11,807	11,807	11,807	11,807	12,297	12,297	12,297	12,297	12,297	12,813	12,813	12,813	12,813	12,813	13,356	13,356	13,356	13,356	13,356	13,912	13,912	13,912	13,912	13,912
Difference (% demand)	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**	**-20**
Recycled Supply	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448
Recycled Demand	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448	448
Difference (% demand)	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***	***0***

Source: UWMP Table 6-4

Notes:

1. *SFPUC production equivalent to those presented in the 2020 UWMP and are considered to be maximum due to the Bay Delta Plan.*
2. *Supply is based on expected supply needs and does not necessarily reflect the maximum supply available. Demands differ from the 2020 UWMP to account for anticipated supply increase due to the Project*

Section 5 - Conclusions

5.1 Sufficiency of Water Supply for the Project

The North Bayshore Master Plan Project (NBMP Project) is projected to increase water demand to 1489 AFY at build-out with a net incremental increase of 197 AFY. As the 2030 General Plan did not account for the incremental increase from the NBMP Project above the North Bayshore Precise Plan EIR and SEIR, the increase in water use at the Site has not been accounted for in the projected growth in water use shown in the 2020 UWMP. However, the estimated increases from the NBMP Project do not outpace anticipated growth given existing (2020) demand.

The project intends to construct to LEED Platinum for all office buildings and Green Point Rating of 120 points, or equivalent for all residential buildings, which will involve landscaping featuring native and low-water use plant species and an irrigation system that is mostly drip irrigation. Water efficiency will also be achieved through the use of low water-consuming WaterSense labeled fixtures and fittings. These conservation measures will reduce the actual onsite water demand. Additionally, the Project will be connected to the City's recycled water system and the Project has proposed the option to treat sewage onsite and have a private onsite recycled water system. The use of recycled water, public and private, will also reduce the actual onsite water demand.

The City of Mountain View water service has sufficient existing water supply to support the NBMP Project under normal, single dry, or multiple dry water years. Under normal conditions, the City is not projected to experience supply shortfalls. Shortfalls of up to 20% are projected for single dry-years and for multiple dry-years assuming the Bay Delta Plan is implemented. With the implementation of the Bay Delta Plan, the City's groundwater supply is crucial to maintain adequate supply so shortfalls do not exceed 20%. Under all conditions, the City may need to impose water conservation measures, per Mountain View Municipal Code, Section 35.28, to reduce demand. Action Stage 1 calls for a demand reduction of up to 10% through increased public education and outreach to encourage voluntary reduction in water use. Action Stage 2 calls for a demand reduction of up to 25% through several mandatory water use restrictions and requirements, such as prohibiting at-home vehicle washing, except by bucket, and requiring water-conserving restaurant dishwashing spray valves. Stage 3 calls for a demand reduction of up to 40% through enforcements of filling swimming pools, requiring car washes to recirculate, and a more stringent requirement to fix leaks. Stage 4 calls for a demand reduction of greater than 40% by restricting all outdoor irrigation and additional, more stringent requirements for fixing leaks. The implementation of these measures would result in supply remaining sufficient for the projected future demand even in multiple dry-years.

5.2 Future Actions

Section 10911(b) of the Water Code states "The City or County shall include the water assessment provided pursuant to Section 10910, in any environmental document prepared for the Project pursuant to [CEQA]." The City of Mountain View will need to adopt this WSA as part of the CEQA environmental review for the proposed NBMP Project, including the findings described above.

Appendix A: References

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David J Powers, Lendlease Silicon Valley Development LLC, Google:

Master Plan EIR Draft Project Description, February 2022

North Bayshore Framework Master Plan, April 2022

Appendix B: City of Mountain View Council Resolution Approving the Water Supply Assessment for the North Bayshore Master Plan Project

PLACEHOLDER FOR ADOPTED WSA